

## **CLAIMS**

1. A method of lining a drilled bore, the method comprising the steps:
  - (a) running a first tubing length of a first diameter into the bore;
  - (b) running a second tubing length into the bore, such that the tubing lengths overlap;
  - (c) expanding at least a portion of the second tubing length where the tubing lengths overlap, to a second diameter; and
  - (d) expanding at least a further portion of the remainder of the second tubing length to a third diameter.
2. The method of claim 1, wherein the second tubing length is run into the bore to a location such that the upper end of the second tubing length overlaps with a lower end of the first tubing length.
3. The method of claim 1, wherein step (c) brings the second tubing length into contact with the first tubing length at at least a portion of the overlap between the tubing lengths.
4. The method of claim 1, wherein following step (c) a fluid passage remains between the tubing lengths at the overlap.
5. The method of claim 1, further comprising expanding said first tubing length.

6. The method of claim 1, further comprising expanding said first tubing length to a variety of diameters.
7. The method of claim 1, further comprising expanding a portion of the second tubing length to a fourth diameter.
8. The method of claim 1, further comprising expanding a portion of the second tubing length to a fifth diameter.
9. The method of claim 1, further comprising expanding a portion of the second tubing length such that the diameter of the tubing length varies.
10. The method of claim 1, further comprising cementing the first tubing length in the bore.
11. The method of claim 1, further comprising cementing the first tubing length in the bore before expanding the second tubing length.
12. The method of claim 1, further comprising cementing the second tubing length in the bore.
13. The method of claim 1, further comprising cementing the second tubing length in the bore after step (c).

14. A method of lining a drilled bore, the method comprising the steps:
  - (a) running a first tubing length of a first diameter into the bore;
  - (b) expanding said first tubing length to a larger second diameter;
  - (c) running a second tubing length into the bore, such that an upper end of the second tubing length overlaps with a lower end of the first tubing length;
  - (d) expanding the upper end of the second tubing to a third diameter larger than said first diameter but smaller than said second diameter; and
  - (e) expanding at least a further portion of the remainder of the second tubing length to said second diameter.
15. The method of claim 14, further comprising cementing the first tubing length.
16. The method of claim 15, further comprising allowing the cement to set before expanding the second tubing length.
17. The method of claim 14, further comprising cementing the second tubing length in the bore.
18. The method of claim 14, further comprising cementing the second tubing length in the bore after step (d).
19. The method of claim 14, wherein expanding the upper end of the second

tubing length to said third diameter creates at least one of a hanging support and a seal between the upper end of the second tubing length and the lower end of the first tubing length.

20. The method of claim 14, wherein following step (d) a fluid passage remains between the tubing lengths at the overlap.

21. A method of lining a drilled bore, the method comprising the steps:

- (a) running a first tubing length into the bore;
- (b) running a second tubing length having a first diameter into the bore, such that an upper end of the second tubing length overlaps with the lower end of the first tubing length;
- (c) expanding a portion of the second tubing length to a diameter larger than the first diameter; and
- (d) expanding another portion of the second tubing.

22. The method of claim 21, in step (c) expanding a lower portion of the second tubing length to a second diameter larger than the first diameter.

23. The method of claim 21, in step (d) expanding an upper end of the second tubing length to a third diameter.

24. The method of claim 21, in step (d) expanding an upper end of the second tubing length to a third diameter larger than said first diameter but smaller than said second diameter.

25. The method of claim 21, wherein step (d) brings the second tubing length into contact with the first tubing length at at least a portion of the overlap between the tubing lengths.

26. The method of claim 21, wherein following step (d) a fluid passage remains between the tubing lengths at the overlap.

27. The method of claim 21, further comprising expanding said first tubing length to a larger diameter.

28. The method of claim 21, further comprising expanding said first tubing length to a variety of diameters.

29. The method of claims 21, further comprising expanding a portion of the second tubing length to a fourth diameter.

30. The method of claim 21, further comprising expanding a portion of the second tubing length to a variety of diameters.

31. The method of claim 21, further comprising cementing the first tubing length.

32. The method of claim 31, comprising allowing the cement to set before expanding the second tubing length.

33. The method of claim 21, further comprising cementing the second tubing length in the bore.

34. The method of claim 21, further comprising cementing the second tubing length in the bore after step (d).

35. The method of claim 21, comprising expanding the upper end of the second tubing length to a third diameter to create at least one of a hanging support and a seal between the upper end of the second tubing length and the lower end of the first tubing length.

36. A method of expanding tubing downhole, the method comprising the steps of:

running tubing of a first diameter into a bore;

expanding a first section of the tubing to a second diameter; and

expanding a second section of the tubing to a third diameter.

37. The method of claim 36, further comprising expanding said tubing such that the diameter of the tubing varies along the length of the tubing.

38. The method of claim 36, comprising overlapping at least a portion of the tubing with at least a portion of tubing previously located in the bore.

39. The method of claim 36, wherein the first and second sections are expanded simultaneously.

40. The method of claim 39, further comprising:  
running first and second expansion tools downhole on a common support,  
and  
operating the expansion tools simultaneously on different sections of the tubing.

41. The method of claim 36, wherein the expansion of the second section follows the expansion of the first section.

42. The method of claim 41, further comprising:  
expanding the first section of the tubing to the second diameter using an expansion tool; and then  
expanding the second section of the tubing to the third diameter using said tool.

43. The method of claim 41, further comprising:
- running a first expansion tool into the bore;
  - expanding the first section of the tubing to the second diameter using said first expansion tool;
  - running a second expansion tool into the bore; and
  - expanding the second section of the tubing to the third diameter using said second expansion tool.
44. The method of claim 36, wherein the third diameter is larger than the second diameter.
45. The method of claim 44, wherein the second section of tubing is expanded to said second diameter before being expanded to said third diameter.
46. The method of claim 36, further comprising:
- expanding the first section of the tubing to the second diameter using a variable diameter expansion tool in a first configuration; and
  - expanding the second section of the tubing to the third diameter using the expansion tool in a second configuration.
47. The method of claim 36, wherein the tubing is provided as a single tubing length.



48. The method of claim 36, wherein the tubing is formed of a plurality of individual tubing lengths.

49. The method of claim 36, wherein the tubing is formed of a plurality of individual tubing lengths, and the tubing lengths are run into the bore and expanded separately.

50. The method of claim 49, wherein ends of adjacent tubing lengths are located relative to one another to create an overlap.

51. The method of claim 50, comprising the steps:

- (a) running a first tubing length into the bore;
  - (b) expanding said first tubing length to said second diameter;
  - (c) running a second tubing length into the bore, such that an upper end of the second tubing overlaps with a lower end of the first tubing length;
  - (d) expanding the upper end of the second tubing to said third diameter;
- and
- (e) expanding at least a further portion of the remainder of the second tubing length to said second diameter.

52. The method of claim 51, further comprising running in and expanding further tubing lengths to create a lined bore of substantially constant diameter, corresponding to said second diameter.

53. The method of claim 51, wherein the difference between the second and third diameters corresponds to the wall thickness of the second tubing.
54. The method of claim 1, wherein the tubing comprises solid-walled tubing.
55. The method of claim 1, wherein the tubing comprises slotted tubing.
56. The method of claim 1, wherein the tubing comprises expandable sand screen.
57. The method of claim 1, further comprising utilising an expansion tool in the form of an expansion cone and wherein at least part of the expansion is achieved by means of moving the expansion cone through the tubing.
58. The method of claim 1, further comprising utilising an expansion tool in the form of a rotary expander and wherein at least part of the expansion is achieved by means of rotary expansion.
59. The method of claim 1, further comprising utilising a fixed diameter expansion tool.
60. The method of claim 1, further comprising utilising a variable diameter expansion tool.

61. The method of claim 1, further comprising expanding at least one section of the tubing to a non-uniform diameter using a compliant expansion tool.
62. The method of claim 1, further comprising utilising a retractable expander.
63. A method of expanding tubing downhole, the method comprising the steps of:
- running tubing into a bore;
  - expanding a first section of the tubing; and
  - expanding a second section of the tubing, wherein the expanded first and section sections are of different diameters.
64. A method of expanding tubing downhole, the method comprising the steps of:
- running tubing into a bore; and
  - expanding a portion of the tubing, intermediate the ends of the tubing, to a larger diameter.
65. The method of claim 64, wherein the intermediate portion comprises sandscreen.
66. The method of claim 64, wherein the intermediate portion is expanded into contact with a surrounding bore wall.

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67. The method of claim 64, wherein the ends of the tubing comprise connectors.

68. A lined bore made in accordance with the methods of claim 1.